

Using Malathion to Eradicate the Boll Weevil in Tennessee

Q: What is malathion?

A: Malathion is a commonly used home, garden, and orchard organophosphate insecticide. It is one of the safest pesticides available. There are many uses for malathion, including agricultural and human health uses. In an agricultural setting, malathion is used to eliminate pests, like boll weevils and fruit flies, that threaten the productivity of important crops like cotton and citrus. In urban areas, malathion is used to control mosquitoes that can carry West Nile virus and other diseases of public health importance. Malathion is also used as an insecticide to control pests in homes and personal gardens. In addition to taking care of agricultural pests, malathion is approved by the U.S. Food and Drug Administration as a prescription drug for the treatment of head lice on humans.

Q: Why is malathion used to eradicate the boll weevil?

A: Prior to the formation of the Southeastern Boll Weevil Eradication Foundation, farmers had their own methods of chemical treatment to counteract the destructive boll weevil. Many of these methods were much less environmentally friendly than malathion and less effective. Without a total eradication plan that encompassed all fields, farmers worked individually to control the pest, treating their fields multiple times each season, only to do the same thing again year after year.

One of the main goals of the eradication foundation is to reduce the continual use of these potent pesticides. The end result of the foundation's efforts will be a drastic reduction in the use of pesticides by cotton farmers. In other states that have already eradicated the boll weevil, pesticide use has dropped by as much as 40 to 90 percent.

Without the help of the boll weevil eradication foundation, farmers would have no choice but to revert back to their previous ways in order to protect their cotton crop and their livelihood. This is why the majority of the region's farmers voted to fund the foundation's eradication efforts beginning in 2000.

Q: How much malathion is used?

A: The amount of malathion needed to effectively kill the boll weevil is very small. Only ten ounces of malathion are used for every acre that is treated. That's like taking one can of soda and evenly distributing it over an entire acre.

Q: How is the malathion applied?

A: Both aerial and ground applications of malathion may be used depending on the size and location of the cotton fields. Aerial application are performed with fixed-wing aircraft and some helicopters. Ground applications involve the use of tractors or all-terrain vehicles mounted with automatic sprayers controlled by the driver. The malathion is released at an ultra low volume, creating a mist that blankets each field.

The boll weevil eradication program uses careful precision to apply malathion to cotton fields. Because of application techniques and the rural location of the cotton fields, human exposure is greatly reduced. Unlike other eradication programs which spray entire areas, the boll weevil foundation only targets cotton fields, further minimizing human exposure. Some residents living next to cotton fields, however, may experience drift. The Southeastern Boll Weevil Eradication Foundation in Tennessee is committed to working with homeowners who have questions or concerns about malathion drift or exposure.

Q: How often does the eradication foundation plan to spray each cotton field?

A: It takes about three seasons to eradicate the boll weevil. During the first season all fields are treated on a regular basis in order to kill as many of the pests as possible before winter. The first killing frost usually marks the end of treatment for the season.

After the first season, spraying is limited only to fields where infestations are detected. Traps are used to determine whether boll weevils are present in each field. The number of times each field is treated depends on whether additional boll weevils are found following malathion treatments. On average, fields are treated about seven times during the second season.

If all goes as planned, by the third season eradication should be almost complete. Spraying will occur only in fields where the boll weevil continues to be detected. The use of malathion should be minimal considering most fields should already be free of the boll weevil. At the end of the third season, the foun-

dition's eradication efforts should be successful and cotton growers will begin experiencing better yields, and their land value will increase.

Q: Why does the program use airplanes to treat the cotton fields?

A: In order to successfully eradicate the boll weevil, hundreds of thousands of acres of cotton fields must be treated with malathion. It's not feasible to conduct such an extensive eradication program without aerial spraying. Crop dusters are capable of treating fields much more efficiently and just as effectively as ground units. Without crop dusters, the boll weevil eradication program would last longer and cost more money. Helicopters are also effective, but there are not enough in the area to fully support the program or replace the use of planes.

While some people are frightened by the noise from the planes, the sound does serve to notify nearby residents that spraying is taking place.

Q: How are aerial applicators hired?

A: The Southeastern Boll Weevil Eradication Foundation, consisting of cotton representative from North and South Carolina, Virginia, Alabama, Georgia, Florida, Mississippi, and Tennessee, solicits bids for aerial application of pesticides. Bids are reviewed by program management, and contracts are awarded by the Foundation on a competitive basis. All applicators must meet State requirements for certification.

Q: What precautions are taken to avoid spraying houses, businesses, and other public buildings next to cotton fields?

A: The Southeastern Boll Weevil Eradication Foundation uses guidance technology and satellite mapping to ensure that only cotton fields are treated with malathion. Crop dusters are trained to fly with precision and spray fields targeted for boll weevil eradication. Satellite tracking enables the foundation to print out the flight patterns of every plane used by the eradication program. This information can be helpful if there is ever a question about whether a plane sprayed beyond the boundaries of a cotton field.

Extreme care is taken to ensure that schools, hospitals, and other sensitive locations are identified before any spraying takes place. When the cotton fields that surround these buildings are treated, ground equipment is frequently used in order to keep any potential drift to a minimum. Spraying does not occur while children are in school or after school activities are taking place.

In addition, the foundation's aerial and ground sprayers always adhere to strict rules regarding weather conditions in order to limit malathion drift from the cotton fields to nearby homes and buildings.

If the wind blows above 10 mph, all spraying is put on hold until the winds die down.

Q: Is it okay to be outside when malathion is being sprayed on nearby cotton fields.

A: The foundation recommends that people who live next to cotton fields remain indoors during spraying in order to avoid any possible drift. If you have questions about when the fields near your house will be sprayed, call 901-772-8763 and someone from the program should be able to give you a general time frame when the cotton will be treated, so that you can make plans to stay inside or go somewhere else. Changing weather conditions, however, may affect spray times, so it may be necessary for the foundation to adjust its spray schedules.

Q: What will happen if I'm exposed to malathion while the foundation is spraying nearby fields.

A: Because the foundation is treating only cotton fields with malathion, it is unlikely anyone should come into direct contact with the pesticide.

Many people exposed to malathion experience no reaction at all. As mentioned before, it's frequently used in the home and garden as an insecticide. Some people, however, may experience minor irritation. Symptoms will generally clear within an hour or two once exposure stops, and will cause no residual effects.

To prevent such exposure, people should avoid being out of doors in the immediate spraying area for about 30 to 60 minutes after the spraying takes place. Residents immediately adjacent to an area where spraying is taking place may want to keep doors and windows closed during the spraying.

Studies of laboratory animals show some suggestive evidence that malathion may be carcinogenic at extremely high doses over extended periods of time. These levels are thousands of times higher than a person would ever encounter even if they stood in a cotton field and were sprayed directly with malathion each time the field was treated.

Q: How does malathion affect people with allergies, asthma, or other special health problems?

A: Malathion may exacerbate these conditions. If you're concerned, please contact your doctor or a health professional.

Q: Is the spray harmful to pets?

A: The foundation recommends that pets be kept inside while spraying occurs. Pets that are exposed to malathion drift, should not experience any residual effects. If you think your pet may have come into contact with malathion after walking through wet vegetation following a treatment, give them a bath to wash away the chemical.

Malathion can be toxic to fish. If your fish pond sits next to a cotton field, the foundation recommends covering it, especially if the pond is less than three-feet deep. Such ponds should be uncovered shortly after the aerial application to prevent oxygen starvation.

Q: What if malathion gets in my backyard swimming pool?

A: Malathion for boll weevil eradication is applied directly to cotton fields, not to swimming pools. But should drifting malathion enter a shallow pool there would be little health risk to swimmers. If a shallow pool (2 feet or less) was accidentally sprayed directly with malathion during an aerial boll weevil application, as a precaution, people should avoid swimming in the pool for 24 hours. If a pool is deeper, the risk decreases greatly and swimming can commence sooner.

If you are concerned that malathion has drifted into your pool, call the eradication foundation. Environmental monitoring specialists can place dye cards next to your pool prior to the next treatment to determine whether malathion drift is entering your pool. If no spots are visible on the cards, malathion has not drifted into your pool. If spots do appear, the dye cards can be analyzed to determine the amount of drifted malathion and ensure that it is far below any level of concern.

Q: How long will malathion residue remain in yards.

A: Residues from applications of malathion are short-lived. The malathion should dry on grass, vegetation, and other outdoor surfaces within two hours. On especially humid days, it may take longer for malathion to dissipate. As a precaution, you can use a hose to wash off all outdoor household article, including swing sets and picnic tables following treatments. To further reduce any risk of exposure, wear shoes and socks if you live near a cotton field and plan to be outside following a treatment.

Q: Is it safe to eat food from my garden if I live next to a cotton field that's being treated?

A: Yes. Malathion is a commonly used home and garden insecticide. As with any produce, of course, it's important to thoroughly wash your fruit and vegetables before serving. If you're concerned about exposure, samples can be taken from your garden and tested for malathion.

Q: Who can I contact for more information?

A: If you have questions about the program, please call the Southeastern Boll Weevil Eradication Foundation at (901) 772-8763.

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